Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1.-11. (Cancelled)

Claim 12. (New) A method for operating a compression ignition internal combustion engine having a cylinder, in which a combustion chamber is defined between a piston and a cylinder head, an engine control device, an intake valve, an exhaust valve, a fuel feed device and a downstream exhaust gas aftertreatment system, said method comprising:

feeding combustion air to the combustion chamber via the intake valve;

metering a quantity of fuel as a function of an operating point of the engine during a working cycle;

determining a mean gas temperature in the cylinder during a combustion in the combustion chamber;

calculating a gradient of the mean gas temperature; and

determining an untreated nitrogen oxide emission level from the internal combustion engine, based on at least one of a value for the gradient of the mean gas temperature, and a position of the gradient of the mean gas temperature in the combustion chamber.

Claim 13. (New) A method for operating a compression ignition internal combustion engine having a cylinder in which a combustion chamber is defined between a piston and a cylinder head, an engine control device, an intake valve, an exhaust valve, a fuel feed device and a downstream exhaust gas aftertreatment system, said method comprising:

feeding combustion air to the combustion chamber via the intake valve;

metering a quantity of fuel as a function of an operating point of the engine during a working cycle;

determining a mean gas temperature in the cylinder during a combustion operation in the combustion chamber;

determining an untreated nitrogen oxide emission level of the internal combustion engine, based on at least one of a maximum value for the mean gas temperature in the combustion chamber, and a position of a maximum value for the mean gas temperature.

Claim 14. (New) A method for operating a compression-ignition internal combustion engine having a cylinder in which a combustion chamber is defined between a piston and a cylinder head, an engine control device, an intake valve, an exhaust valve, a fuel feed device and a downstream exhaust gas aftertreatment system, said method comprising:

feeding combustion air to the combustion chamber via the intake valve;

metering a quantity of fuel as a function of an operating point of the engine during a working cycle;

determining a mean gas temperature in the cylinder, in the combustion chamber;

determining an untreated nitrogen oxide emission level from the internal combustion engine based on at least one of a mean gas temperature when the intake valve is closed and a final compression temperature in the combustion chamber.

Claim 15. (New) The method as claimed in Claim 12, wherein the mean gas temperature is determined within a defined crank angle range.

Claim 16. (New) The method as claimed in Claim 13, wherein the mean gas temperature is determined within a defined crank angle range.

Claim 17. (New) The method as claimed in Claim 14, wherein the mean gas temperature is determined within a defined crank angle range.

Claim 18. (New) The method as claimed in Claim 12, further comprising:

determining a quantity of a reducing agent for downstream exhaust gas aftertreatment system based on the untreated nitrogen oxide emission level which has been determined.

Claim 19. (New) The method as claimed in Claim 13, further comprising:

determining a quantity of a reducing agent for downstream exhaust gas aftertreatment system based on the untreated nitrogen oxide emission level which has been determined.

Claim 20. (New) The method as claimed in Claim 14, further comprising:

determining a quantity of a reducing agent for downstream exhaust gas aftertreatment system based on the untreated nitrogen oxide emission level which has been determined.

Claim 21. (New) The method as claimed in Claim 12, wherein the metered quantity of fuel is injected into the combustion chamber in such a manner that at least one of a predetermined gradient of the mean gas temperature in the combustion chamber, and a predetermined position of the maximum value for the mean gas temperature, is established in the combustion chamber.

Claim 22. (New) The method as claimed in Claim 13, wherein the metered quantity of fuel is injected into the combustion chamber in such a manner that at least one of a predetermined gradient of the mean gas temperature in the combustion chamber, and a predetermined position of the maximum value for the mean gas temperature, is established in the combustion chamber.

Claim 23. (New) The method as claimed in Claim 14, wherein the metered quantity of fuel is injected into the combustion chamber in such a manner that at least one of a predetermined gradient of the mean gas

temperature in the combustion chamber, and a predetermined position of the maximum value for the mean gas temperature, is established in the combustion chamber.

Claim 24. (New) The method as claimed in Claim 12, wherein the metered quantity of fuel is injected into the combustion chamber in such a manner that a combustion center of gravity is established at a defined crank angle position.

Claim 25. (New) The method as claimed in Claim 13, wherein the metered quantity of fuel is injected into the combustion chamber in such a manner that a combustion center of gravity is established at a defined crank angle position.

Claim 26. (New) The method as claimed in Claim 14, wherein the metered quantity of fuel is injected into the combustion chamber in such a manner that a combustion center of gravity is established at a defined crank angle position.

Claim 27. (New) The method as claimed in Claim 12, wherein an exhaust gas recirculation quantity for setting a defined oxygen concentration in the combustion chamber is set as a function of a combustion center of gravity.

Claim 28. (New) The method as claimed in Claim 13, wherein an

exhaust gas recirculation quantity for setting a defined oxygen concentration in the combustion chamber is set as a function of a combustion center of gravity.

Claim 29. (New) The method as claimed in Claim 14, wherein an exhaust gas recirculation quantity for setting a defined oxygen concentration in the combustion chamber is set as a function of a combustion center of gravity.

Claim 30. (New) The method as claimed in Claim 12, wherein a drop in the oxygen concentration which is required for nitrogen oxide reduction is calculated from the calculated untreated nitrogen oxide emission level, so that an exhaust gas recirculation device is set such that, after combustion air has been mixed with recirculated exhaust gas, a defined oxygen concentration is produced in a cylinder charge upstream of or in the combustion chamber.

Claim 31. (New) The method as claimed in Claim 12, wherein:

oxygen concentration of the combustion air before it enters the combustion chamber is measured by means of an oxygen sensor; and

a defined oxygen concentration of the combustion air upstream of or in the combustion chamber is set by means of the exhaust gas recirculation device as a function of the measured concentration.

Claim 32. (New) The method as claimed in Claim 12, wherein:

oxygen concentration of the exhaust gases after the exhaust gases have emerged from the combustion chamber is measured by means of an oxygen sensor;

oxygen concentration of the combustion air before it enters the combustion chamber is calculated from this signal, an exhaust gas recirculation rate and a measured combustion air quantity; and

a defined oxygen concentration of the combustion air upstream of or in the combustion chamber is set by means of the exhaust gas recirculation device, as a function of the calculated concentration.